

Laboratory **Uttam (Bharat) Electricals Private Limited, B-189/A, Road No. 9(F), VKI Area, Jaipur, Rajasthan**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7799**

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Validity **30.08.2018 to 29.08.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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**ELECTRICAL TESTING**

<b>I. TRANSFORMERS AND REACTORS</b>				
1.	<b>Transformers &amp; Reactors</b>	Winding Resistance	IS 2026 (Part -1) Cl. No. 10.1.1.a IS 1180 (Part-1) Cl. No. 21.2.a	1.0005 mΩ to 1.0011 kΩ
2.	<b>Power transformer (Upto 12.5 MVA)</b>	Voltage Ratio & check of phase displacement	IS 2026 (Part -1), Cl. No. 10.1.1.b IS 1180 (Part-1) Cl. No. 21.2.b	20.25 to 1958.72
3.	<b>Distribution transformer (non- sealed Type) Upto 2.5 MVA</b>	Short circuit impedance & load loss at 50% and 100 % load.	IS 2026 (Part -1), Cl. No. 10.1.1.c IS 1180 (Part-1) Cl. No. 21.2.c	1 V to 600 V & 20 W to 18 kW
		No load loss and current.	IS 2026 (Part -1)-2 Cl. No. 10.1.1.d IS 1180 (Part-1) Cl. No. 21.2.d	20 W to 18 kW 500 mA to 20.0 A
		Insulation resistance	IS 2026 (Part -1) Cl. No. 10.1.3.j IS 1180 (Part-1) Cl. No. 21.2.e	2.02 MΩ to 890 GΩ
		Induced over voltage withstand test	IS 2026 (Part -1) Cl. No. 10.1.1.e IS 1180 (Part-1) Cl. No. 21.2.f IS 2026 (Part -3)	100 V to 1000 V 50 Hz to 901 Hz
		Separate source voltage withstand test	IS 2026 (Part -1) Cl. No. 10.1.1.e IS 1180 (Part-1) Cl. No. 21.2.g IS 2026 (Part -3)	20 kV to 80 kV

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		Zero sequence impedances on three-phase transformers	IS 2026 (Part -1) Cl. No. 10.1.3.d	30 V to 598 V 500 mA to 20 A
		Temperature rise	IS 2026 (Part -1) Cl. No. 10.1.2.a IS 2026 (Part -2) IS 1180 (Part-1) Cl. No. 21.3.b	500 mA to 20 A, 10 °C to 100 °C
		Magnetic balance test on 3-phase Transformers	CBIP Publications no. 317- Apr-2013 Cl. No. 3.17	30 V to 598 V
		No load current at 112.5 percent voltage	IS 1180 (Part-1) Cl. No. 21.4.c	500 mA to 20 A
		Dissipation factor (Tan delta) & Capacitance	IS 2026(Part -1) Cl. No. 10.1.3.j CBIP Publications no. 317 Apr-2013, Cl. No. 3.16	1 µF to 9282.6 pF 0.00092 to 0.01625
		Harmonics of the no load current	IS 2026 (Part -1) Cl. No. 10.1.3.g	1 to 50 <sup>th</sup> . Order
<b>II.</b>	<b>ELECTRICAL MATERIALS</b>			
<b>1.</b>	<b>Transformer Oil</b>	Oil BDV	IS 335	20 kV to 100 kV